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Three new species of *Septobasidium* (*Septobasidiaceae*) from Hainan Province in China

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Abstract —Three new *Septobasidium* species are described: *S. capparis* on *Capparis membranifolia* associated with *Andaspis* sp., *S. reevesiae* on *Reevesia longipetiolata* associated with *Lepidosaphes* sp., and *S. dacrydii* on *Dacrydium pierrei* associated with *Pinnaspis* sp. They were collected from Hainan Province, China.

Key words —*Pucciniomycetes*, *Septobasidiales*, taxonomy

To date, nine new species and three new Chinese records of *Septobasidium* have been discovered from Hainan Province (Chen & Guo 2011b,c,d, 2012, Lu & Guo 2009a, 2010b,c). An additional three new species of *Septobasidium* are reported as follows:

Septobasidium capparis S.Z. Chen & L. Guo, **sp. nov.** Figs 1–6

Fungal Name FN570003

Differs from *Septobasidium euryae-groffii* by its thicker hymenium and larger basidia.

Type: China, Hainan Province, Changjiang, Baomeiling, alt. 250 m, on *Capparis membranifolia* Kurz (*Capparaceae*), associated with *Andaspis* sp. (*Diaspididae*), 12.IV.2011, L. Guo 11599 (HMAS 263233, **holotype**).

Etymology: The epithet refers to the substrate plant genus, *Capparis*.

Basidiomata on branches, resupinate, 10–24 cm long, 1.5–4 cm wide, pale cinnamon-brown or brown; margin determinate, surface smooth, cracked at maturity. In section 1500–2000 µm thick, composed of 3–8 layers. Subiculum brown, 40–70 µm thick. Pillars brown, 80–100 µm high, 70–130 µm wide, branched outwards to form a hyphal layer, 500–550 µm high. From hymenial layer the fungal hyphae renew growth successively to form hyphal layers and

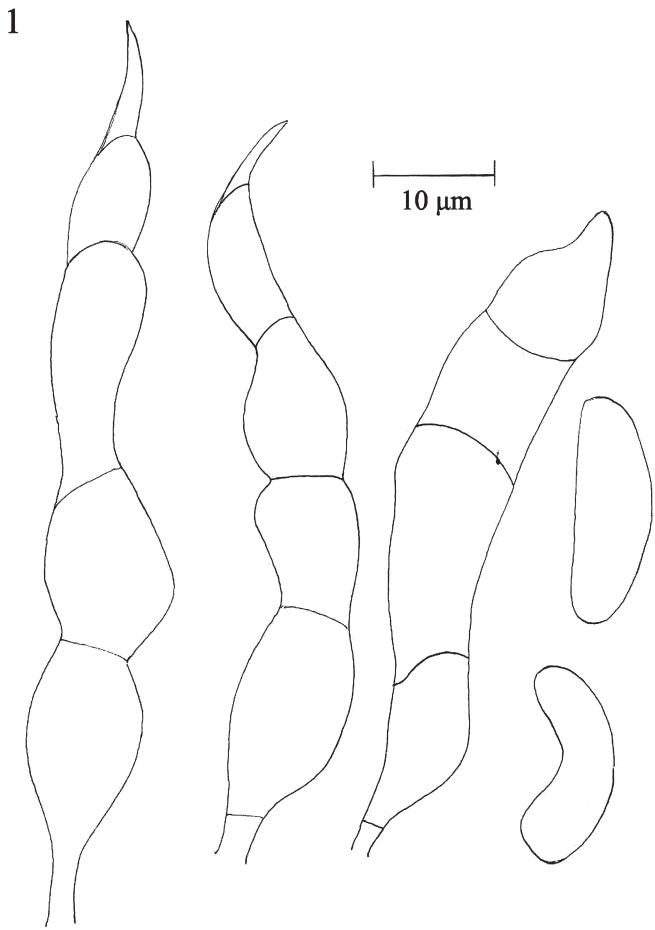
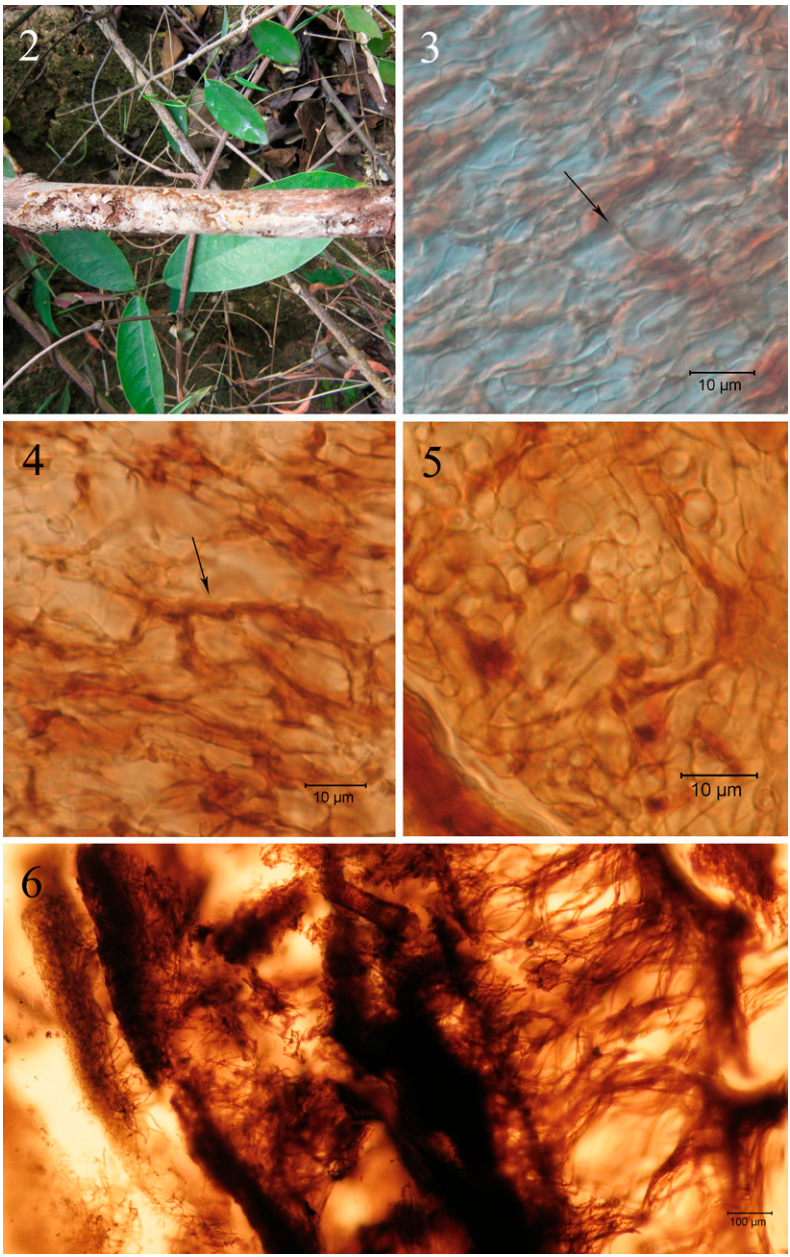


Fig. 1. *Septobasidium capparis* (HMAS 263233, holotype). Basidia and basidiospores.

hymenia. Hymenium brown, 100–170 μm thick. Basidia arising directly from the hyphae without a probasidial cell, cylindrical, straight or slightly curved, 4-celled, 45–56 × 8–12 μm, hyaline or brown. Sterigmata conical, 6–8 × 3–5 μm, hyaline or brown. Basidiospores reniform, 16–20 × 4.5–8 μm, hyaline. Haustoria consisting of irregularly coiled hyphae.

Comments: *Septobasidium capparis* is similar to *S. euryae-groffii* C.X. Lu & L. Guo, which differs by its thinner hymenium (70–110 μm) and smaller basidia (20–45 × 5–8 μm; Lu & Guo 2010a).



Figs. 2–6 *Septobasidium capparis* (HMAS 263233, holotype). 2. Basidioma on branch. 3–4. Basidia (arrows). 5. Haustoria. 6. Section of basidioma.

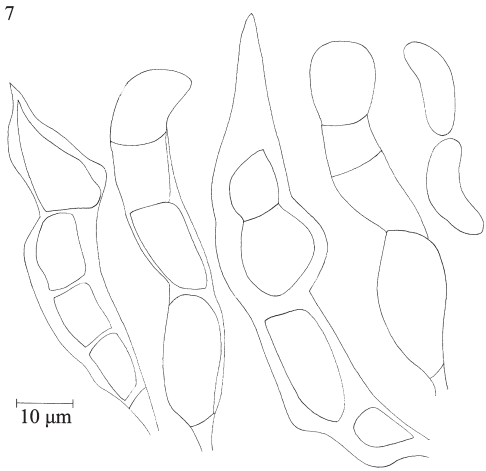


Fig. 7. *Septobasidium reevesiae* (HMAS 263427, holotype). Basidia and basidiospores.

Septobasidium reevesiae S.Z. Chen & L. Guo, **sp. nov.** Figs 7–12

Fungal Name FN570004

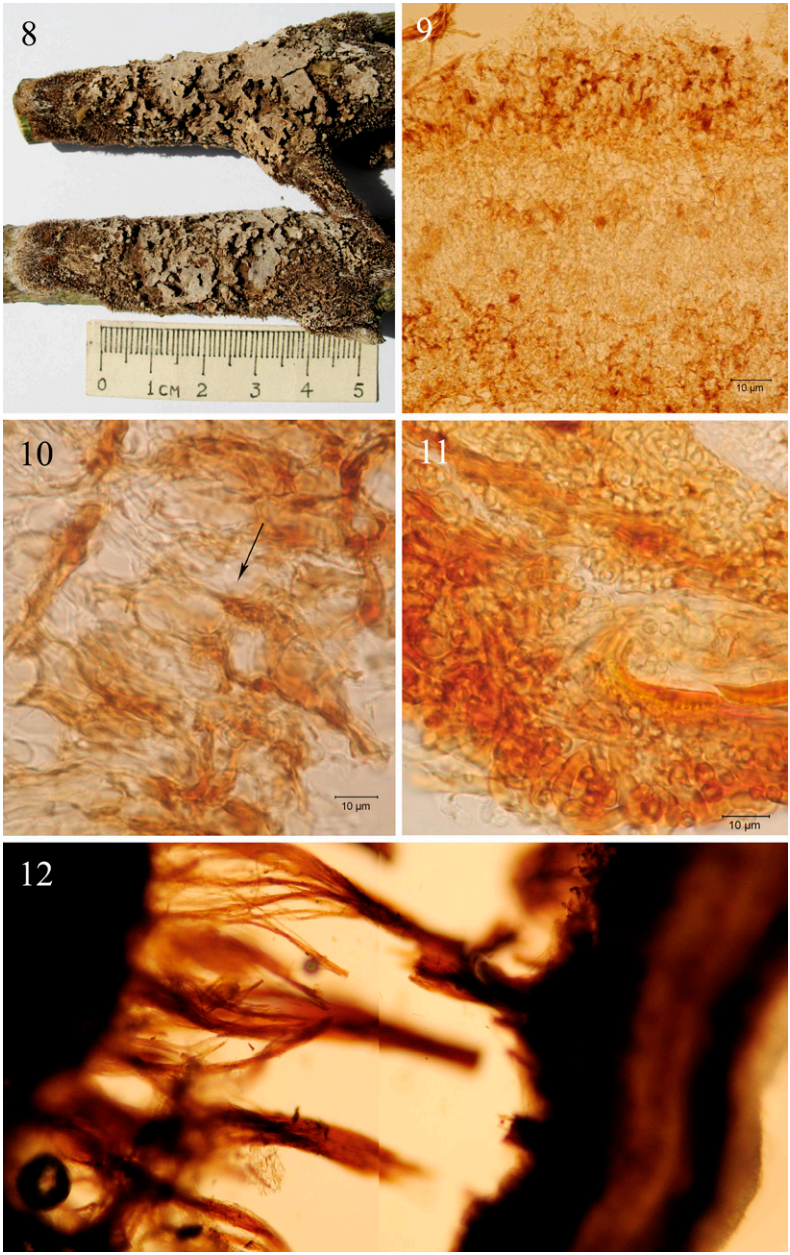
Differs from *Septobasidium henningsii* by its upright pillars and thicker stratified hymenial layer.

Type: China, Hainan Province, Bawangling Natural Reserve, alt. 1030 m, on *Reevesia longipetiolata* Merr. & Chun (*Sterculiaceae*), associated with *Lepidosaphes* sp. (*Diaspididae*), 25.XI.2010, Y.F. Zhu & F. He 518 (HMAS 263427, **holotype**).

Etymology: The epithet refers to the substrate plant genus, *Reevesia*.

Basidiomata on branches, resupinate, 7.5–8.5 cm long, 3–6 cm wide, cinnamon-brown; margin white, determinate, surface smooth, at first frequently forming orbiculate or discoideous patches, confluent in the old stage. The dense pillars are barely visible, especially near the margin. In section 1650–2200 μm thick. Subiculum brown, 30–50 μm thick. Pillars fasciculate, brown, 700–1170 μm high, 40–100 μm wide. Hymenial layer hyaline or brown, 730–1000 μm thick, often forming 2–4 strata, with a brown, 2–7 μm thick horizontal layer between the hymenia, and closely packed parallel upright hyphae. Basidia arising directly from the hyphae without a probasidial cell, cylindrical, straight or slightly curved, 4-celled, 37–55 × 8–13(–18) μm, hyaline or brown; wall 1–2(–3) μm thick. Sterigmata conical, 9–11(–23) × 3–4.5 μm. Basidiospores reniform, 15–16×5–6 μm. Haustoria consisting of irregularly coiled hyphae.

Comments: *Septobasidium reevesiae* is similar to *S. henningsii* Pat., which differs by its thinner hymenial layer (60–400 μm high) and characteristic slanting, entangled, anastomosing pillars (Couch 1938).



Figs. 8–12. *Septobasidium reevesiae* (HMAS 263427, holotype). 8. Basidiomata on branches. 9. Stratified hymenial layer. 10. Basidia (arrow). 11. Haustoria. 12. Section of basidioma.

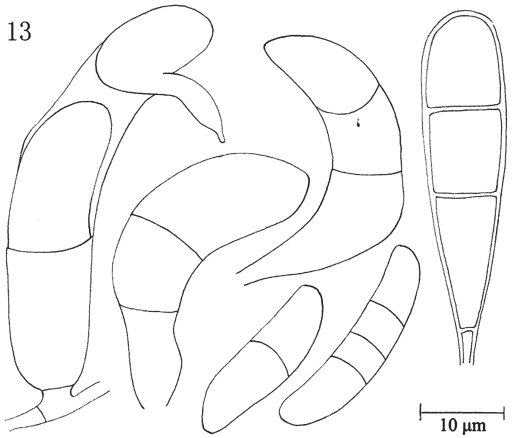


Fig. 13. *Septobasidium dacrydii* (HMAS 263232, holotype). Basidia and basidiospores.

Septobasidium dacrydii S.Z. Chen & L. Guo, **sp. nov.** Figs 13–18

Fungal Name FN570005

Differs from *Septobasidium apiculatum* by its thicker section with pillars.

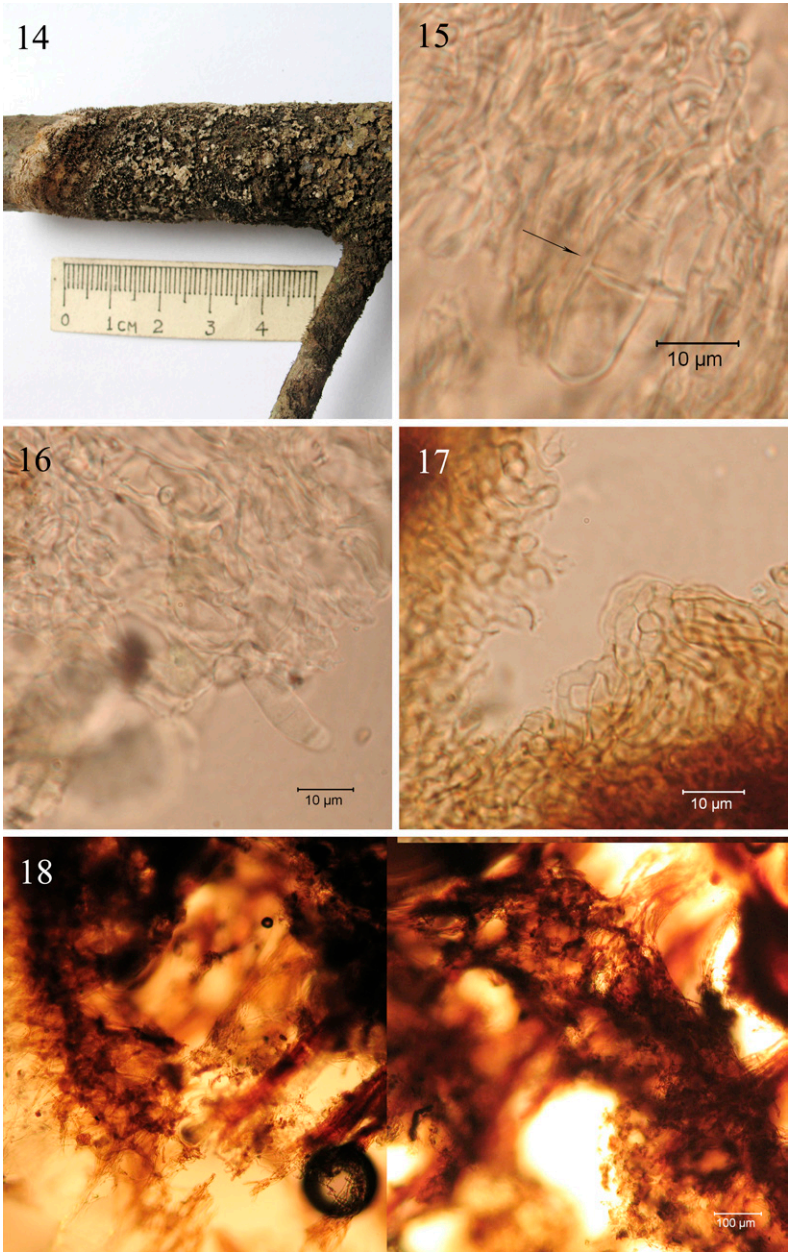
Type: China, Hainan Province, Bawangling Natural Reserve, alt. 1050 m, on *Dacrydium pierrei* Hickel (*Podocarpaceae*), associated with *Pinnaspis* sp. (*Diaspididae*), 24.XI.2010, Y.F. Zhu & F. He 529 (HMAS 263232, **holotype**).

Etymology: The epithet refers to the substrate plant genus, *Dacrydium*.

Basidiomata on branches, resupinate, 35 cm long, 1–6 cm wide, cinnamon-brown or dark brown; margin determinate, surface smooth, peeled off in the old stage, dark brown pillars and hyphal layers emerging. In section 1450–2000 μm thick. Subiculum brown, 45–70 μm thick. From the subiculum forming pillars or hyphal layers. Pillars brown, higher or shorter, 850–1200 μm high, 35–110 μm wide, or 100–200 μm high, 40–80 μm wide. Hyphal layer, 700–800 μm high. Pillars and hyphal layers successively formed from the hyphal layer. Hymenium hyaline, 85–140 μm thick. Basidia arising directly from the hyphae without a probasidial cell, cylindrical or clavate, straight or slightly curved, 3-celled, 30–40 × 9–10 μm, hyaline. Sterigmata conical, 10–15 × 4–5 μm, hyaline. Basidiospores cylindrical or fusiform, 21–26×5–6.5 μm, hyaline. Haustoria consisting of irregularly coiled hyphae.

Comments: *Septobasidium dacrydii* is similar to *S. apiculatum* Couch ex L.D. Gómez & Henk, which differs by its thinner section (250–550 μm thick) and absence of pillars (Couch 1938).

Including the three new species reported in this paper, 46 *Septobasidium* species have now been reported in China (Sawada 1933, Couch 1938, Teng 1963, Tai



Figs. 14–18. *Septobasidium dacrydii* (HMAS 263232, holotype). 14. Basidioma on branch. 15. Basidia (arrow). 16. A basidiospore. 17. Haustoria. 18. Section of basidioma.

1979, Kirschner & Chen 2007, Lu & Guo 2009a,b,c, 2010a,b,c, 2011, Lu et al. 2010, Chen & Guo 2011a,b,c,d, 2012).

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